INCORPORATION OF UNCERTAINTY IN-FORMATION IN MODELING A CHARAC-TERISTIC OF A DEVICE

Abstract

A method and model for modeling a characteristic C that is distributed within a domain. A provided base equation expresses C as a function f of a variable V through use of $N+1$ parameters C_0, C_1, ..., C_N in the form $C = f(C_0, C_1, ..., C_N, V)$, wherein $N \geq 1$, and wherein C_0, C_1, ..., C_N are subject to uncertainty. A probability density function (PDF) is provided for describing the probability of occurrence of C_0 in accordance with the uncertainty. Subsidiary equations expressing C_1, ..., C_N in terms of C_0 are provided. A value of C may be sampled by: providing a value V" of V; picking a random value C_{0R} of C_0 from the PDF; computing values C_{1R}, ..., C_{NR} of C_1, ..., C_N, respectively, by substituting C_{0R} into the subsidiary equations; and calculating C by substituting C_{0R}, C_{1R}, ..., C_{NR} and V" into the base equation.